

Classical and Quantum Gravity 2001 vol.18 N5, pages 941-953

Singular behaviour of electric and magnetic fields in dielectric media in a nonlinear gravitational wave background

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Abstract

Evolution of electric and magnetic fields in dielectric media, driven by the influence of a strong gravitational wave, is considered for four exactly integrable models. It is shown that the gravitational wave field gives rise to new effects and to singular behaviour in the electromagnetic field.

<http://dx.doi.org/10.1088/0264-9381/18/5/311>
